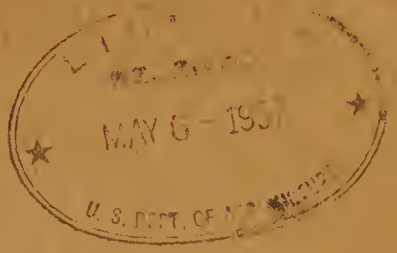

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR OREGON

AS OF

FEBRUARY 1, 1941

* * *

Issued February 9, 1941

by

Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Oregon Agricultural Experiment Station, Medford Branch
cooperating

* * * * *

Data included in this report were obtained by the agencies listed above, in cooperation with the Oregon State Engineer, U. S. Forest Service, National Park Service and other Federal, State and local organizations. 1/

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WATER SUPPLY OUTLOOK

The outlook for Oregon 1941 water supply is fair to good, and very much better than last year at this time.

Snow water content above 5,000 feet elevation doubled during January and by month's end averaged four times that of a year ago, one and one-half times that of two years ago and was twice that of three years ago. Between elevations of 2,000 and 5,000 feet, snow water content increased eightfold during January and at month's end averaged twelve times that of a year ago. The large January increase indicates the general lack of low elevation snow on January first, rather than any present above-normal supply, and the great relative increase over last year only emphasizes the great snow shortage then.

Watershed soils are mostly unfrozen and generally very well wetted, thus favoring maximum sustained run-off from what ever snow pack may be accumulated at the beginning of the run-off season.

Total water stored in all reservoirs exceeds that of last year, but is not as great as in either 1939 or 1938 at this same date. The number of reservoirs half full or better is the least for several years, but prospects for reservoir inflow are good.

Precipitation accumulated in Oregon valleys since October 1 is generally greater than for the same period last year and in the southcentral and southeastern parts is above normal. In other sections it is not seriously below normal.

COMPARISON OF SNOW COVER AS OF FEBRUARY FIRST WITH THAT OF PREVIOUS YEARS

For Oregon as a whole, and for elevations above 5,000 feet, of the 47 snow courses reporting, 20 were measured last month, 46 were measured about February 1, 1940, 42 were measured about February 1, 1939 and 34 were measured about February 1, 1938. Comparison of records on these courses for the approximate dates mentioned follows:

Snow cover (water content) now present above 5,000 feet:

As percent of that present one month ago	--- 221
As percent of that present one year ago	--- 393
As percent of that present two years ago	--- 146
As percent of that present three years ago	--- 208

For elevations from 2,000 to 5,000 feet, of the 40 snow courses and Copco water stations reporting about February 1, 1941, 24 were measured last month, 37 were measured about February 1, 1940, 35 were measured about February 1, 1939 and 33 were measured about February 1, 1938. Comparison of records on these courses for the approximate dates mentioned follows:

Snow cover (water content) now present from 2,000 to 5,000 feet:

As percent of that present one month ago	--- 767
As percent of that present one year ago	---1150
As percent of that present two years ago	--- 118
As percent of that present three years ago	--- 372

Snow water content on 95 percent of all of the courses is greater than at this time in 1940 and in 69 percent of the comparisons, is greater than on about February 1 of either 1939 or 1938.

The great relative percentage increase in snow water content at elevations below 5,000 feet during the past month shows the scarcity of snow January first rather than any unusual supply on February 1.

Individual snow course measurements beginning on Page 9 are arranged under each stream basin in order of descending elevation.

STATUS OF SNOW COVER AS OF FEBRUARY FIRST (Cont.)

Summary of Snow Survey Data
by Tributary Drainages as of about February First

Tributary Drainage	Number of snow courses averaged	Average Water Depth in Snow Cover (Inches) 1941	1940	1939	1938	1941 Snow Water Depth (Inches) as Percent of that in 1940	1939	1938
Owyhee River	1	8.4	4.8			175		
	1	8.4		8.8			95	
	-	-			-			-
Malheur River	3	8.6	3.5			246		
	3	8.6		4.7			183	
	3	8.6			4.3			200
Burnt River	3	7.7	2.7			285		
	3	7.7		4.9			157	
	2	7.0			3.2			219
Powder River	5	10.2	5.0			204		
	5	10.2		8.1			126	
	2	8.9			7.4			120
Pine Creek	1	24.1	9.7			248		
	1	24.1		17.5			138	
	1	24.1			21.4			113
Grande Ronde River	6	12.6	7.8			162		
	6	12.6		11.7			108	
	3	15.8			14.7			107
Walla Walla River	1	14.1	5.9			239		
	1	14.1		14.1			100	
	1	14.1			9.7			145
Umatilla River	4	7.3	3.4			215		
	4	7.3		6.8			107	
	3	6.9			4.3			160
Willow Creek	1	7.7	2.8			275		
	1	7.7		5.4			145	
	1	7.7			2.8			275
John Day River	9	6.8	2.5			272		
	9	6.8		5.2			131	
	7	7.3			3.8			192
Deschutes River	6	10.2	5.4			189		
	6	10.2		11.6			88	
	6	10.2			8.0			128

Crooked River	4	6.6	2.0			330		
	4	6.6		3.9			169	
	3	6.0			1.9			316
Sandy River	2	15.1	6.4			236		
	2	15.1		21.3			71	
	2	15.1			19.0			79
Clackamas River	2	4.1	2.5			164		
	2	4.1		7.4			55	
	2	4.1			5.6			73
Willamette River	6	10.8	4.6			235		
	6	10.8		15.6			69	
	4	12.9			9.6			134
Harney Basin	6	5.2	1.9			274		
	4	5.8		3.5			166	
	4	5.8			1.4			414
Silver Lake Basin	1	2.6	1.0			260		
	1	2.6		2.8			93	
	-	-			-			-
Warner Lake	1	8.9	3.0			297		
	1	8.9		5.4			165	
	-	-			-			-
Umpqua River	7	7.5	2.0			375		
	5	9.1		9.8			93	
	6	6.4			5.0			128
Upper Rogue River	13	12.2	4.8			254		
	11	9.1		7.9			115	
	13	12.2			7.9			154
Applegate River	4	20.3	6.3			322		
	4	20.3		9.3			218	
	4	20.3			7.4			274
Illinois River	2	15.3	2.7			567		
	2	15.3		7.8			196	
	2	15.3			2.5			612
Klamath Lake Basin	*21	9.6	3.7			259		
	*19	7.4		5.1			145	
	*19	10.1			5.9			171
Goose Lake Basin	* 4	6.6	1.4			471		
	* 4	6.6		4.8			138	
	* 2	6.2			3.7			168

* Including Copco water measurement stations.

STATUS OF WATERSHED SOIL MOISTURE

(Refer to Pages 5 and 6 of February 1, 1940 Oregon Snow Survey Report for additional discussion of this subject.)

Oregon watershed soils now generally unfrozen or frozen only to shallow depths, were not frozen when fall 1940 soil moisture samples were taken. It is believed this soil freezing first occurred during the period December 10-15. At Crater Lake Park it is known that soil freezing occurred then under approximately two feet of snow.

Summary of Watershed
Soil Moisture Determinations
Southern Oregon 1936 - 1940
(Soil moisture each sampling date expressed as percentage of that found in the fall of 1937)

Station	Depth / Date	0-3	3-6	0-6	Station	Depth / Date	0-3	3-6	0-6
Annie Spring snow course Elev. 6018	11-14-36	27.4	39.2	32.0	Fish Lake snow course Elev. 4865	11-14-36	48.0	56.8	52.8
	10-21-37	100.0	100.0	100.0		5-11-37	88.5	89.9	89.3
	10-18-38	59.4	55.5	58.1		10-22-37	100.0	100.0	100.0
	11-8-39	60.3	59.3	59.9		10-14-38	45.1	61.5	53.7
	3-20-40	73.7	87.6	79.0		11-7-39	86.5	83.4	85.0
	11-13-40	81.5	95.7	87.1		*3-21-40	86.2	93.0	90.0
						10-15-40	68.5	68.1	68.4
Whale-back snow course Elev. 5140	11-20-36	65.1	75.8	69.9	Sis-kiyou Summit snow course Elev. 4630	11-15-36	46.0	-	-
	10-21-37	100.0	100.0	100.0		5-15-37	107.8	-	-
	10-15-38	63.2	71.9	67.0		10-20-37	100.0	-	-
	11-8-39	79.1	85.6	82.0		10-17-38	51.3	-	-
	No measurement spring of 1940					11-7-39	51.3	-	-
	10-17-40	74.3	82.3	78.0		3-18-40	88.6	-	-
						10-16-40	54.6	-	-
Hyatt Prairie snow course Elev. 4900	11-3-36	53.0	73.8	65.6	*Little or no snow left on ground surface.				
	5-15-37	94.7	77.9	82.3					
	10-20-37	100.0	100.0	100.0					
	10-17-38	45.2	40.1	41.1					
	11-7-39	75.1	66.8	69.9					
	*3-18-40	90.1	71.2	78.6					
	10-16-40	65.3	59.0	61.4					

Southern Oregon watershed soil moisture in mid-October 1940 was generally only slightly less than in early November 1939 and was much better than mid-October 1938.

Watershed soil moisture stations were established in 1939 on Ochoco Mountain near Marks Creek snow course No. 344 and on Blue Mountain Summit snow course No. 141. An additional station was established at Chemult snow course No. 834 in the spring of 1940. In the following table, soil moisture of each foot depth (the average of several locations in each case) at each station is shown for each sampling date. Soil moisture is expressed as a percentage of soil dry weight.

Soil Moisture Station	Date	Depth 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	0-3
Ochoco	11-21-39	17.0	30.0	39.7	41.7	43.1	43.7	-	-	28.9
Mountain	3-26-40	58.3	53.6	59.7	42.4	41.0	41.8	40.0	42.9	57.2
Elev. 5080	11-15-40	40.9	35.0	39.2	43.0	38.0	37.3	40.2	40.2	38.4
Blue Mtn.	11-20-39	19.8	20.0	19.7	20.9	21.8	-	Bedrock		19.8
Summit	3-26-40	54.8	32.4	25.2	28.6	23.4	-	Bedrock		37.5
Elev. 5098	11-15-40	48.3	25.3	22.0	23.6	25.1	27.1	Bedrock		31.9
Chemult	3-27-40	63.2	53.7	51.4	52.6	42.0	37.7	41.8	44.9	56.1
Elev. 4760	11-14-40	34.7	34.5	32.4	32.5	34.1	35.4	38.3	40.7	33.9

Soil moisture conditions on the headwaters of Crooked, John Day and Burnt Rivers appeared to be considerably better in the fall of 1940 than at the same time in 1939.

Watershed soil moisture stations were established on Dooley Mountain (Burnt and Powder River divide) and at the Granite-Sumpter summit (Powder and John Day River divide) in the fall of 1940. Because there are no preceding values with which last fall's soil moisture at those stations may be compared, those results are not included here.

Measurements of flow of deep-seated springs is expected to provide important supplementary data to watershed soil moisture determinations. (Marr, J. C. "Measurement of Foothill-Springs to Determine Soil-Moisture and Ground-Water Conditions in Snake Basin, Idaho." Proc. Am. Geophysical Union, Part III, pp. 1021-1027. 1940.) Such measurements were initiated in the Rogue River watershed in 1940 and will be extended to other watersheds as possible.

STATUS OF RESERVOIR STORAGE AS OF FEBRUARY FIRST

In the following tabulation, water storage in acre feet in important Oregon reservoirs as of about February 1, 1941 is compared with storage as of approximately the same date in 1940, 1939, 1938 and 1937.

Storage Reservoir	Stream Basin	Capacity Acre ft.	Acre Feet in Storage About 2-1-41	About 2-1-40	About 2-1-39	About 2-1-38	About 2-1-37
Agency Valley	Malheur	60,000	43,640	41,290	41,060	22,110	22,340
Antelope	Owyhee	33,434	3,707	Empty	3,750	10,000[a]	5,000[a]
Clear Lake	Lost River	440,240[b]	204,920[b]	183,000[b]	229,510[b]	105,480[b]	45,480[b]
Crane Prairie	Deschutes	55,336[c]	18,940	29,210	21,080	40,550	35,390
Crescent Lake	Deschutes	80,000	22,700	28,900	54,280	33,570	25,960
Drew Creek	Goose Lake	62,500	29,400	17,850	32,520	41,100	33,100
Emigrant Gap	Rogue	8,200	6,487	5,803	1,859	7,568	Dry
Fish Lake	Rogue	7,720	3,280	3,959	5,800	3,911	4,820
Four Mile Lake	Klamath[d]	14,000	2,303	7,484	9,927	11,434	7,550
Gerber	Klamath[d]	94,000	44,330[b]	36,370[b]	35,830	44,560	36,370
Hyatt Prairie	Klamath[d]	16,000	2,417	2,885	10,230	6,891	3,500
McKay	Umatilla	75,000	24,980	15,120	21,440	21,440	4,021
Ochoco	Crooked	47,500	3,620	3,740	21,620	10,780	540
Owyhee	Owyhee	715,000	453,780	392,760	521,300	571,980	629,390
Thief Valley	Powder	17,400	16,070	5,600	11,045	15,341	3,547
Upper Klamath	Klamath	524,800[b]	233,000[b]	265,800[b]	354,600[b]	435,200[b]	295,150[b]
Wallowa Lake	Wallowa	40,920	16,960	10,930	36,380	12,880	6,960
Warm Springs	Malheur	170,000	110,000	74,700	137,280	30,840	12,440
Willow Creek	Malheur	26,000	4,250	600[e]	4,000[a]	Dry	Dry

a - Estimated.
b - Available for use.
c - 40,500 by agreement.
d - By ditch to Rogue River side.
e - Approximate.

STATUS OF VALLEY PRECIPITATION AS OF OCTOBER 1 TO DATE

Month	Oct.		Nov.		Dec.		Jan.		Period	
Section	P	D	P	D	P	D	P	D	P	D
S.E.	2.22	+1.57	1.00	+0.12	0.74	-0.16	2.0	+0.9	5.96	+2.43
S.C.	1.71	+0.70	1.44	-0.15	2.00	+0.17	2.7	+0.8	7.85	+1.52
N.C.	0.94	+0.13	1.07	-0.39	1.11	-0.42	1.7	-0.1	4.82	-0.78
Col.Riv.	1.61	+0.64	1.80	+0.09	1.15	-0.45	1.4	-0.2	5.96	+0.08
Wal.Mts.	2.55	+1.21	2.10	+0.09	1.17	-0.78	0.3	-1.4	6.12	-0.88
Blue Mts.	2.62	+1.10	2.45	+0.34	1.23	-0.88	1.2	-0.9	7.50	-0.34
Southern	1.76	-0.02	2.92	-0.92	4.19	+0.65	2.4	-1.4	11.27	-1.69
Willamette	5.14	+1.10	7.13	-1.05	6.19	-1.83	5.8	-1.7	24.26	-3.48
Area	2.32	+0.80	2.49	-0.23	2.22	-0.46	2.2	-0.5	9.22	-0.39

P - Inches precipitation. D - Inches departure from normal.

S.E. - Southeastern Oregon range lands, Harney and Malheur Counties.

S.C. - Southcentral Oregon range lands, Lake County and Klamath County, except the Cascade Mountains.

N.C. - Northcentral Oregon wheat and range lands, Crook, Deschutes, Jefferson, Wheeler and part of Grant Counties.

Col.Riv. - Columbia River area, wheat and range lands, Gilliam, Morrow, Sherman, Wasco and part of Umatilla Counties.

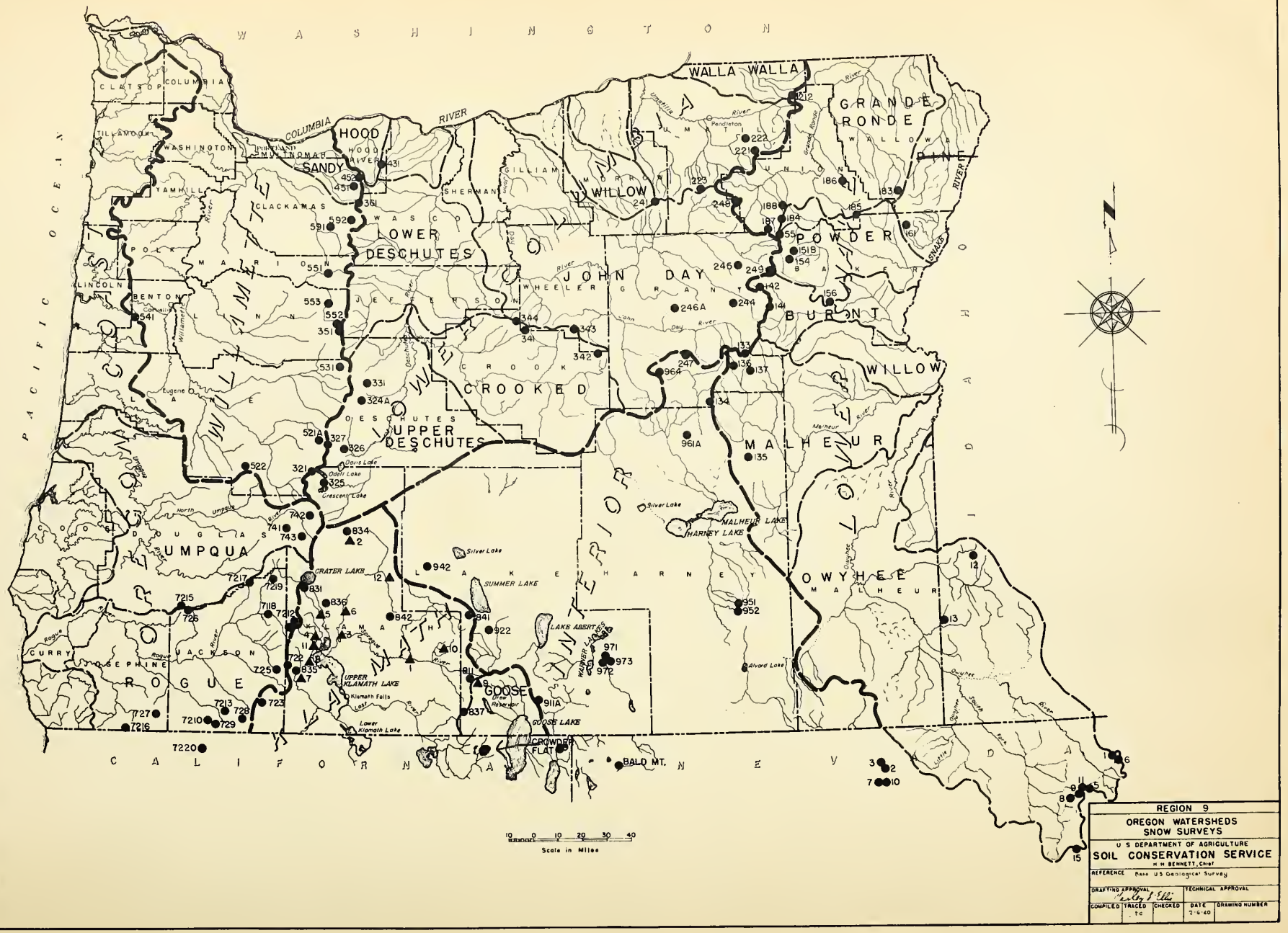
Wal.Mts. - Wallowa Mountain area, forest and range lands, Wallowa and part of Baker County.

Blue Mts. - The Blue Mountain forest and range area, Union and parts of Baker, Grant and Umatilla Counties.

Southern - Southern Oregon irrigated section, Jackson and Josephine Counties.

Willamette - Parts of Polk, Benton, Yamhill, Washington, Lane and all of Linn, Marion, Clackamas and Multnomah Counties.

Note: Data for the last month shown above are preliminary only, as they are based on a few stations only. Data for earlier months have been corrected to include all the stations in climatological data for the area.



REGION 9

OREGON WATERSHEDS
SNOW SURVEYS

U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
H H BENNETT, Chief

REFERENCE	Base U S Geological Survey			
DRAFTING APPROVAL			TECHNICAL APPROVAL	
COMPILED	TRACED	CHECKED	DATE	DRAWING NUMBER
	TC		2-6-40	

INDEX TO SNOW COURSES

Number	Name	Elev.
	UPPER COLUMBIA DRAINAGE Lower Sneke in Oregon	
	OWYHEE RIVER	
Nev.1	Big Bend	6800
Nev.2	Buckskin, Lower	6800
Nev.3	Buckskin, Upper	8200
952	Fish Creek	7900
Nev.5	Fry Canyon	6800
Nev.6	Gold Creek Ranger Sta.	6600
Nev.7	Granite Peak	8600
Nev.8	Jack Creek, Lower	7000
Nev.9	Jack Creek, Upper	7800
Nev.10	Martin Creek	7000
Nev.11	Rodeo Flat	7000
Ida.12	Silver City	6400
951	Silvies	6900
Ide.13	South Mountain	5100
Nev.15	Taylor Canyon	5200
	MALHEUR RIVER	
133	Blue Mountain Spring	5900
137	Crane Prairie	5375
136	Lake Creek	5120
134	Rock Spring	5100
135	Stinking Water	4800
	BURNT RIVER	
141	Blue Mountain Summit	5098
156	Dooley Mountain	5430
142	Tipton	5100
	POWDER RIVER	
155	Anthony Lake	7125
154	Bourne	5800
156	Dooley Mountain	5430
151B	Eilertson Meadows	5400
249	Gold Center	5340
184	Summit Springs	6000
185	Taylor Green	5740
	PINE CREEK	
161	Schneider Meadows	5400
	GRANDE RONDE RIVER	
183	Aneroid Lake	7480
155	Anthony Lake	7125
188	Beaver Reservoir	5340
187	Camp Carson	5970
186	Moss Spring	5860
248	Schoolmarm	4775
184	Summit Springs	6000
185	Taylor Green	5740
212	Tollgate	5070

Number	Name	Elev.
	LOWER COLUMBIA DRAINAGE	
	WALLA WALLA RIVER	
212	Tollgate	5070
	UMATILLA RIVER	
222	Emigrant Springs	3925
223	Lucky Strike	5050
221	Meacham	4300
212	Tollgate	5070
	WILLOW CREEK	
241	Arbuckle Mountain	5400
	JOHN DAY RIVER	
241	Arbuckle Mountain	5400
246A	Beech Creek Summit	4800
133	Blue Mountain Spring	5900
141	Blue Mountain Summit	5098
244	Dixie Springs	6650
249	Gold Center	5340
964	Izee Summit	5293
245	Olive Lake	6000
248	Schoolmarm	4775
247	Sterr Ridge	5156
	DESCHUTES RIVER	
326	Caldwell Ranch	4400
321	Cascade Summit	4880
327	Charlton Lake	5750
361	Clear Lake	3500
325	Crescent Lake	4760
343	Derr	5670
351	Hogg Pass	4755
344	Marks Creek	4540
324A	New Dutchman Flet	6400
341	Ochoco Meadows	5200
342	Tamarack	4800
331	Three Creeks Meadows	5600
	HOOD RIVER	
431	Brooks Meadows	4300
	SANDY RIVER	
361	Clear Lake	3500
452	Phlox Point - Mt. Hood	5600
451	Still Creek	3700
	CLACKAMAS RIVER	
592	Clackamas Lake	3400
591	Peavine Ridge	3500
	WILLAMETTE RIVER	
551	Breitenbush	[illegible]
321	Cascade Summit	4880
522	Champion	4500
327	Charlton Lake	5750
351	Hogg Pass	4755
531	McKenzie	4800
553	Marion Forks	2730
541	Mary's Peak	3620
552	Santiam Junction	3990
521A	Weldo Lake	5500

Number	Name	Elev.
	KLAMATH LAKE BASIN	
831	Annie Spring	6018
722	Billie Creek Divide	6000
834	Chemult No. 1	4760
Calif.	Crowder Flat	5200
723	Hyatt Prairie Reeervoir	4900
835	Lake of the Woods	4960
811	Quartz Mountain	5320
7211	Seven Lakes No. 1	6800
7212	Seven Lakes No. 2	6200
~~7220~~	~~Scragg Mountain~~	~~6200~~
837	Strawberry	5600
841	Summer Rim	7200
836	Sun Mountain	5350
842	Taylor Butte	5100
	GOOSE LAKE BASIN	
911A	Camas Creek	5720
811	Quartz Mountain	5320
837	Strawberry	5600
	INDEX TO CALIFORNIA-OREGON POWER COMPANY SNOW WATER STATIONS	
	KLAMATH LAKE BASIN	
1	Beatty	4300
2	Chemult	4761
3	Chiloquin	4187
4	Crystel	4200
5	Fort Klamath	4150
6	Kirk	4533
7	Lake of the Woods	4960
8	Pelican	4200
9	Quartz Mountain	5504
10	Richardson Ranch	4800
11	Rocky Point	4150
12	Yamsey	4600
	GOOSE LAKE BASIN	
9	Quartz Mountain	5504

Number	Name	Elev.
	INTERIOR DRAINAGE	
	SILVER LAKE	
942	Silver Creek	4900
	CHEWAUCAN RIVER	
922	Mill Creek	6200
	HARNEY BASIN	
973	Deer Creek	6670
952	Fish Creek	7900
971	Hart Mountain	6350
961A	Idylwild Park	5200
964	Izee Summit	5293
134	Rock Spring	5100
951	Silvies	6900
247	Starr Ridge	5156
	WARNER LAKE	
911A	Camas Creek	5720
	GUANO LAKE	
Nev.	Bald Mountain	6720
972	Guano Creek	6480
	WEST COAST DRAINAGE	
	UMPQUA RIVER	
522	Champion	4500
743	Diamond Lake	5315
726	Goolaway Gap	3000
7215	Gollaway Mountain	3730
742	N.Umpqua near Lake Creek	4215
741	Trap Creek	3800
7217	Whaleback	5140
	ROGUE RIVER	
7216	Althouee	4400
831	Annie Spring	6018
729	Big Red Mountain	6500
722	Billie Creek Divide	6000
725	Fish Lake	4865
726	Goolaway Gap	3000
7215	Goolaway Mountain	3730
727	Grayback Peak	6000
723	Hyatt Prairie Reservoir	4900
7210	Little Red Mountain	6500
7211	Seven Lakes No. 1	6800
7212	Seven Lakes No. 2	6200
7219	Silver Burn	3720
728	Siskiyou Summit	4630
7218	South Fork Canal	3500
7213	Wagner Butte	6900
7217	Wheleback	5140
7220	SCRAGG MOUNTAIN	6200

TRIBUTARY BASINS (Primary & Secondary & Snow Courses)	Oregon Number	LOCATION Sec.	Twp.	Range	Elev.	SNOW COVER MEASUREMENTS About February 1, 1941 Date	Avg. Snow Depth (In.)	Avg. Water Depth (In.)	AVERAGE WATER DEPTH (INCHES) One Month ago (1-1-41)	One Year ago (2-1-40)	Two Years ago (2-1-39)	Three Years ago (2-1-38)
UPPER COLUMBIA DRAINAGE												
LOWER SNAKE IN OREGON												
OWYHEE RIVER												
Silver City	Idaho	6	5S	3W	6400	2-1	28.4	8.4	2.1	4.8	8.8	-
MALHEUR RIVER												
Blue Mountain Spring	133	21	15S	35E	5900	1-31	43.0	13.4	6.2	3.6	7.4	9.0
Crane Prairie	137	24	16S	34E	5375		Not measured		5.0	3.0	5.4	4.1
Lake Creek	136	10	16S	33½E	5120		Not measured		6.8	3.4	6.5	7.8
Rock Spring	134	23	18S	32E	5100	2-1	24.4	7.6	3.0	3.2	3.7	1.3
Stinking Water	135	33	21S	34E	4800	1-30	19.2	4.9	1.9	3.7	2.9	2.7
BURNT RIVER												
Dooley Mountain	156	32	11S	40E	5430	1-31	31.9	9.0	3.9	3.1	2.9	-
Tipton	142	34	10S	35½E	5100	1-31	28.8	8.7	-	3.1	6.8	4.5
Blue Mountain Summit	141	6	12S	36E	5098	1-31	26.8	5.3	2.8	1.8	5.0	1.8
POWDER RIVER												
Anthony Lake	155	18	7S	37E	7125	1-30	45.7	15.8	10.4	8.7	13.6	-
Bourne	154	33	8S	37E	5800	1-23	43.3	10.5	8.7	5.3	7.8	9.9
Dooley Mountain	156	32	11S	40E	5430	1-31	31.9	9.0	3.9	3.1	2.9	-
Eilertson Meadows	151B	18	8S	38E	5400	1-24	29.3	7.3	3.1	4.0	9.0	5.0
Gold Center	249	21	9S	36E	5340	1-23	33.0	8.4	6.1	3.9	7.0	-

TRIBUTARY BASINS (Primary & Secondary & Snow Courses)	Oregon Number	LOCATION Sec.	Twp.	Range	Elev.	SNOW COVER MEASUREMENTS About February 1, 1941 Date	Avg. Snow Depth (In.)	Avg. Water Depth (In.)	AVERAGE WATER DEPTH (INCHES) One Month ago (1-1-41)	One Year ago (2-1-40)	Two Years ago (2-1-39)	Three Years ago (2-1-38)
PINE CREEK												
Schneider Meadows	161	35	6S	45E	5400	1-30	88.9	24.1	-	9.7	17.5	21.4
GRANDE RONDE RIVER												
Aneroid Lake	183	16	4S	45E	7480	1-26	78.7	19.3	-	16.5	13.4	21.0
Anthony Lake	155	18	7S	37E	7125	1-30	45.7	15.8	10.4	8.7	13.6	-
Moss Spring	186	27	3S	41E	5860	1-31	46.5	13.9	-	7.5	18.0	13.3
Beaver Reservoir	188	8	5S	37E	5340	1-29	36.6	14.7	10.2	7.4	8.2	-
Schoolmarm	248	28	4S	34E	4775	1-29	8.4	2.0	-	0.9	3.0	-
LOWER COLUMBIA DRAINAGE												
WALLA WALLA RIVER												
Tollgate	212	32	4N	38E	5070	1-28	47.9	14.1	-	5.9	14.1	9.7
UMATILLA RIVER												
Lucky Strike	223	28	3S	32E	5050	1-29	30.3	8.3	-	3.4	6.0	-
Meacham	221	24&25	1S	35E	4300	1-27	14.5	4.0	-	2.3	4.0	2.1
Emigrant Springs	222	29	1N	35E	3925	1-27	8.1	2.7	-	2.2	2.9	1.0
WILLOW CREEK												
Arbuckle Mountain	241	33	4S	29E	5400	1-30	28.9	7.7	-	2.8	5.3	2.8
JOHN DAY RIVER												
Olive Lake	245	14	9S	33½E	6000	1-31	38.9	10.5	6.4	5.0	7.4	8.7

TRIBUTARY BASINS (Primary & Secondary & Snow Courses)	Oregon Number	LOCATION Sec.	Twp.	Range	Elev.	SNOW COVER MEASUREMENTS About February 1, 1941 Date	Avg. Snow Depth (In.)	Avg. Water Depth (In.)	AVERAGE WATER DEPTH (INCHES) One Month ago (1-1-41)	One Year ago (2-1-40)	Two Years ago (2-1-39)	Three Years ago (2-1-38)
Blue Mountain Spring	133	21	15S	35E	5900	1-31	43.0	13.4	6.2	3.6	7.4	9.0
Arbuckle Mountain	241	33	4S	29E	5400	1-30	28.9	7.7	-	2.8	5.3	2.8
Gold Center	249	21	9S	36E	5340	1-23	33.0	8.4	6.1	3.9	7.0	-
Izee Summit	964	28	16S	29E	5293	1-29	25.1	5.8	2.4	1.0	5.5	1.7
Starr Ridge	247B	20	15S	31E	5150	1-29	19.9	4.7	1.7	1.1	1.9	0.9
Blue Mountain Summit	141	6	12S	36E	5098	1-31	26.8	5.3	2.8	1.8	5.0	1.8
Beech Creek Summit	246A	4	12S	30E	4800	1-28	14.1	3.8	0.8	2.4	4.0	2.0
Schoolmarm	248	28	4S	34E	4775	1-29	8.4	2.0	-	0.9	3.0	-
DESCHUTES RIVER												
Charlton Lake	327	23	21S	6E	5750	1-31	37.3	10.8	-	5.1	11.3	9.0
Derr	343	14	13S	23E	5670	1-30	28.5	8.4	-	1.9	5.0	3.2
Three Creeks Meadows	331	3	17S	9E	5600	1-26	26.6	6.8	-	4.3	10.1	8.2
Ochoco Meadows	341	21	13S	20E	5200	1-28	30.4	8.6	-	1.8	5.7	N.R.
Cascade Summit	321	7	23S	6½E	4880	1-28	44.2	13.5	-	6.3	17.4	8.8
Tamarack	342	8	15S	25E	4800	1-29	23.2	6.0	-	2.0	2.8	1.7
Crescent Lake	325	11	24S	6E	4760	1-28	29.1	7.8	-	4.2	6.5	3.1
Hogg Pass	351	24	13S	7½E	4755	1-29	51.0	17.2	7.7	9.5	20.4	15.0
Marks Creek	344	25	12S	19E	4540	1-30	13.7	3.6	-	2.1	2.2	0.9
Caldwell Ranch	326	30	21S	8E	4400	1-31	18.7	5.1	-	2.9	3.6	4.0
Clear Lake [a]	361	29	4S	9E	3500	1-28	14.2	5.1	-	-	-	-
SANDY RIVER												
Phlox Point - Mt. Hood	452	6	3S	9E	5600	2-2	61.0	24.6	14.3	9.7	33.0	31.8
Still Creek	451	25	3S	8½E	3700	2-2	15.9	5.6	1.9	3.0	9.6	6.1
Clear Lake [a]	361	29	4S	9E	3500	1-28	14.2	5.1	-	-	-	-

a - Not a regular measurement; entire course length of 3,000 feet not measured.

TRIBUTARY BASINS (Primary & Secondary & Snow Courses)	Oregon Number	LOCATION Sec.	Twp.	Range	Elev.	SNOW COVER MEASUREMENTS About February 1, 1941 Date	Avg. Snow Depth (In.)	Avg. Water Depth (In.)	AVERAGE WATER DEPTH (INCHES) One Month ago (1-1-41)	One Year ago (2-1-40)	Two Years ago (2-1-39)	Three Years ago (2-1-38)
CLACKAMAS RIVER												
Peavine Ridge	591	14&15	6S	7E	3500	2-1	15.0	4.5	1.4	3.2	9.6	6.5
Clackamas Lake	592	35	5S	8½E	3400	1-31	9.7	3.6	Trace	1.8	5.3	4.6
WILLAMETTE RIVER												
Charlton Lake	327	23	21S	6E	5750	1-31	37.3	10.8	-	5.1	11.3	9.0
Waldo Lake	521A	15	21S	6E	5500	1-30	35.1	10.0	-	4.8	10.6	5.4
Cascade Summit	321	7	23S	6½E	4880	1-28	44.2	13.5	-	6.3	17.4	8.8
McKenzie	531	35	15S	7½E	4800		No report		-	5.0	21.0	-
Hogg Pass	351	24	13S	7½E	4755	1-29	51.0	17.2	7.7	9.5	20.4	15.0
Champion	522	12	23S	1E	4500	1-31	36.4	13.6	3.8	1.7	18.0	-
Santiam Junction	552	14	13S	7E	3990	1-29	18.4	6.2	2.2	-	-	-
Mary's Peak	541	21	12S	7W	3620	2-1	0.0	0.0	-	0.0	16.0	-
Marion Forks	553	28	11S	7E	2730	1-29	5.5	1.8	Trace	-	-	-
Breitenbush	551	21	9S	7E	2325	1-30	0.0	0.0	0.4	-	-	-
INTERIOR DRAINAGE												
SILVER LAKE												
Silver Creek	942	25&26	29S	13E	4900	1-28	11.2	2.6	-	1.0	2.8	-
HARNEY BASIN												
Deer Creek	973	17	36S	26E	6670	1-22	24.5	4.8	-	1.9	-	-
Hart Mountain	971	1	36S	25E	6350	1-24	13.2	3.4	-	1.2	2.8	-

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Izee Summit	964	28	16S	29E	5293	1-29	25.1	5.8	2.4	1.0	5.5	1.7
Idylwild Camp	961A	33	20S	31E	5200	2-2	21.7	5.2	2.8	2.8	3.0	1.6
Starr Ridge	247B	20	15S	31E	5150	1-29	19.9	4.7	1.7	1.1	1.9	0.9
Rock Spring	134	23	18S	32E	5100	2-1	24.4	7.6	3.0	3.2	3.7	1.3
GUANO LAKE												
Guano Creek	972	13	36S	25E	6480	1-23	24.1	4.6	-	2.2	-	-
WARNER LAKE												
Camas Creek	911A	5	39S	21E	5720	1-29	31.3	8.9	-	3.0	5.4	-
W E S T C O A S T D R A I N A G E												
UMPQUA RIVER												
Diamond Lake	743	29	27S	6E	5315	1-31	38.0	10.5	3.5	3.1	12.2	7.9
Whaleback	7217	3	31S	2E	5140	2-1	65.2	19.8	-	7.1	16.1	11.4
Champion	522	12	23S	1E	4500	1-31	36.4	13.6	3.8	1.7	18.0	-
No.Umpqua nr.Lake Creek	742	19	26S	6E	4215	2-6	10.6	3.8	-	1.2	N.R.	4.0
Trap Creek	741	1	27S	4E	3800	2-4	8.9	3.0	-	1.0	N.R.	5.1
Goolaway Mountain	7215	30	32S	3W	3730	1-29	4.7	1.6	-	0.0	2.4	1.7
Goolaway Gap	726	32	32S	3W	3000	1-29	0.0	0.0	-	0.0	0.5	0.0
ROGUE RIVER												
Wagner Butte	7213	1	40S	1W	6900	1-31	34.8	10.5	-	4.0	6.4	3.9
Seven Lakes No. 1	7211	3	34S	5E	6800	1-29	102.1	34.5	-	16.5	N.R.	21.8

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Big Red Mountain	729	33	40S	1W	6500	1-28	88.7	27.4	-	9.9	11.0	13.2
Little Red Mountain	7210	25	40S	2W	6500	1-28	57.1	19.2	-	5.8	7.4	7.6
Scragg Mountain(Calif.)	7220	9	47N	10W	6200	1-29	64.4	21.2	9.2	-	-	-
Seven Lakes No. 2	7212	26	33S	5E	6200	1-30	84.0	25.2	-	10.3	N.R.	15.8
Annie Spring	831	19	31S	6E	6018	1-30	107.9	36.8	18.6	20.5	26.5	22.8
Billie Creek Divide	722	30	36S	5E	6000	1-28	41.0	10.8	4.0	3.7	11.3	9.2
Grayback Peak	727	9	40S	5W	6000	1-30	70.0	24.2	-	5.5	12.4	4.9
Whaleback	7217	3	31S	2E	5140	2-1	65.2	19.8	-	7.1	16.1	11.4
Hyatt Prairie Reservoir	723	15	39S	3E	4900	1-31	18.4	5.8	2.8	0.0	5.7	3.5
Fish Lake	725	3	37S	4E	4865	1-29	12.2	4.2	-	0.0	3.3	6.7
Siskiyou Summit	728	17	40S	2E	4630	2-1	13.2	4.4	1.8	0.1	4.5	2.2
Althouse	7216	17	41S	7W	4400	1-31	17.9	6.4	-	0.0	3.3	Trace
Goolaway Mountain	7215	30	32S	3W	3730	1-29	4.7	1.6	-	0.0	2.4	1.7
Silver Burn	7219	30	30S	4E	3720	1-31	16.6	5.7	1.0	0.0	6.4	3.4
South Fork Canal	7218	12	33S	3E	3500	1-31	0.0	0.0	Trace	0.0	3.7	0.0
Goolaway Gap	726	32	32S	3W	3000	1-29	0.0	0.0	-	0.0	0.5	0.0
KLAMATH LAKE BASIN												
Seven Lakes No. 1	7211	3	34S	5E	6800	1-29	102.1	34.5	-	16.5	N.R.	21.8
Seven Lakes No. 2	7212	26	33S	5E	6200	1-30	84.0	25.2	-	10.3	N.R.	15.8
Annie Spring	831	19	31S	6E	6018	1-30	107.9	36.8	18.6	20.5	26.5	22.8
Billie Creek Divide	722	30	36S	5E	6000	1-28	41.0	10.8	4.0	3.7	11.3	9.2
Strawberry	837	4	40S	16E	5600	2-6	22.8	6.6	-	2.4	5.2	4.0
Quartz Mountain 2/		33	37S	16E	5504	1-31	19.0	5.8	1.9	0.0	6.5	3.4
Sun Mountain	836	22	32S	7½E	5350	1-29	72.5	20.0	-	10.2	12.1	11.0
Quartz Mountain	811	2	38S	16E	5320	2-1	18.0	5.0	1.1	Trace	2.2	N.R.
Crowder Flat (Calif.)		30	47N	11E	5200	1-30	11.7	3.3	-	1.5	1.3	-

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Taylor Butte	842	16	33S	11E	5100	1-29	16.6	4.4	-	0.9	2.4	2.2
Lake of the Woods No. 1	835	11	37S	5E	4960	1-29	17.8	5.0	1.0	0.6	3.4	3.3
Hyatt Prairie Reservoir	723	15	39S	3E	4900	1-31	18.4	5.8	2.8	0.0	5.7	3.5
Richardson Ranch 2/		22	35S	14E	4800		No report		0.0	0.0	1.0	1.9
Chemult No. 1	834	21	27S	8E	4760	2-1	28.9	8.1	2.1	5.5	5.3	4.1
Yamsey 2/		19	30S	11E	4600	1-31	3.5	1.4	0.8	0.0	0.6	0.5
Kirk 2/		1	33S	7E	4533	1-31	26.5	7.2	2.4	1.8	2.0	2.1
Beatty 2/		22	36S	12E	4300	1-31	0.0	0.0	0.0	0.0	1.2	0.0
Crystal 2/		26	34S	6E	4200	1-31	26.0	8.0	1.2	2.2	4.1	1.8
Pelican 2/		10	36S	6E	4200	1-31	7.0	1.8	Trace	0.0	1.9	1.0
Chiloquin 2/		34	34S	7E	4187	1-31	5.8	1.6	Trace	0.0	1.6	1.8
Fort Klamath 2/		22	33S	7½E	4150	1-31	19.2	6.6	0.8	1.8	2.8	2.5
Rocky Point 2/		26	35S	6E	4150	1-31	7.8	2.9	Trace	0.0	1.2	1.0
GOOSE LAKE BASIN												
Camas Creek	911A	5	39S	21E	5720	1-29	31.3	8.9	-	3.0	5.4	-
Strawberry	837	4	40S	16E	5600	2-6	22.8	6.6	-	2.4	5.2	4.0
Quartz Mountain 2/		33	37S	16E	5504	1-31	19.0	5.8	1.9	0.0	6.5	3.4
Quartz Mountain	811	2	38S	16E	5320	2-1	18.0	5.0	1.1	Trace	2.2	N.R.

1/ The snow measurements are made principally by field personnel of the following organizations:

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and corps of State Watermasters
- Oregon State Highway Engineers

FEDERAL
- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of Interior
  - Fish and Wildlife Service
  - Bureau of Reclamation
  - Geological Survey
  - Indian Service
  - National Park Service

PUBLIC UTILITIES
- Eastern Oregon Light and Power Company
- Portland General Electric Company
- The California Oregon Power Company

MUNICIPALITIES
- City of Corvallis
- City of La Grande
- City of The Dalles

MUNICIPAL DISTRICTS
- Central Oregon Irrigation District
- Deschutes County Municipal Improvement District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users' Association
- Medford and Rogue River Irrigation Districts
- Ochoco Irrigation District
- Warmsprings Irrigation District

2/ Water content determined by melting a measured sample. (The California Oregon Power Company's station.)

3/ N. R. = No report.